REMARKS

A. Double patenting rejection

Claims 60-73 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 32-79 of copending Application No. 09/880,204. Applicants will submit a terminal disclaimer meeting the requirements of 37 CFR 1.321(c) once allowable subject matter is indicated.

B. 103 Rejection relying on Jiang and Osenbach

Claims 60-65 are rejected under 35 U.S.C. 103(a) as obvious over Jiang et al., U.S. Patent 5,966,399 (hereinafter "Jiang") in view of Osenbach, "Low Cost/High Volume Laser Modules Using Silicon Optical Bench Technology," Electronic Components and Technology Conference, p. 581 (1998) (hereinafter "Osenbach"). The rejection repeatedly refers to Seki, a reference used in a previous office action, but not mentioned in the above rejection. Applicants respectfully request that the Examiner clarify whether Seki is a part of the rejection. The Examiner states:

> In regards to claim 60, Jiang fails to disclose the following:
> a) a transparent bonding layer disposed between said lens and a surface of said stack, said transparent bonding layer bonding said lens to said stack, said transparent bonding layer comprising an inorganic material.
> However, Osenbach et al. ("Osenbach") discloses ALO utilized as a bonding attachment for a lens [citation omitted]. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Seki [sic] to include ALO utilized as a bonding attachment as disclosed in Osenbach because it aids in providing extremely stable coupling over environmental extremes [citation omitted].

Applicants respectfully traverse the rejection for several reasons:

1. A bonding layer is not required to attach Jiang's lens

Jiang's lens element 44 of Fig. 1 is cited by the Examiner as being the transparent lens of claim 60. Lens element 44 is "integrated with device 10 by etching into an uppermost

PATENT LAW GROUP LLP
2635 N. FIRST ST.
SUITE 223
SAN JOSE, CA 95134
(408) 382-0480
FAX (408) 382-0481

surface, or layer, of second stack 22 of distributed Bragg reflectors, a diffractive planar lens element 44." See column 6, lines 46-48. "[S]econd stack[] . . . 22 of distributed Bragg reflectors . . . [is] composed of a plurality of layers, . . . 36 and 37." See column 3, lines 53-55. "[L]ayers 36 and 37 are epitaxially disposed or deposited on or overlapping cladding region 28." See column 4, lines 44-45. "Second stack 22 of distributed Bragg reflectors can alternatively include a plurality of pairs of alternating layers of a dielectric material to be deposited as a final step in the device fabrication process." See column 4, lines 28-31. Jiang's lens element 44 is thus formed either in a semiconductor layer that is epitaxially grown on the device, or in a dielectric material that is deposited on the device. In either case, an additional bonding layer is not required to attach lens element 44. Accordingly, there is no motivation to modify Jiang to include a bonding layer, as suggested by the Examiner.

2. Osenbach's bond cannot be used with Jiang's device

Even if Applicants assume, solely for the sake of argument, that *any* bonding layer could be used in Jiang's device, Osenbach's bonding layer is inappropriate. On page 582 of Osenbach, on the sixth line of the second paragraph of the second column, Osenbach states "The AlO bonding techniques provides a solid state bond between the outer surface of the lens, in this case SiO_2, and the aluminum metallization whose thickness is controlled to better than 200 nm." Emphasis added. This passage teaches AlO bonding only between an SiO_2 lens and an aluminum layer. Nowhere does Osenbach suggest or teach that other materials may be bonded using AlO bonding. The two materials in Jiang that the Examiner proposes to bond using Osenbach's AlO process are two GaAs-based semiconductor layers, or a GaAs-based semiconductor layer and a dielectric layer, not SiO_2 and aluminum. Based on the teachings of Osenbach, a person of skill in the art would have no expectation that AlO bonding can be used on materials other than SiO_2 and aluminum. Accordingly, there is no expectation that Jiang can be successfully combined with Osenbach.

PATENT LAW GROUP LLP
2635 N. FIRST ST.
SUITE 223
SAN JOSE, CA 95134
(408) 382-0480
FAX (408) 382-0481

3. Osenbach does not teach a transparent bonding layer

Osenbach's aluminum metallization layer with a thickness greater than 200 nm will likely not be transparent. Accordingly, Osenbach does not teach a transparent bonding layer as recited in claim 60.

Since the combination of Jiang and Osenbach does not teach a transparent bonding layer, since there is no motivation to combine Jiang with Osenbach, and since there is no expectation that Jiang and Osenbach can be successfully combined, the Examiner has failed to set forth *any* of the three requirements of a prima facie case of obviousness for claim 60. Accordingly, claim 60 is allowable over Jiang and Osenbach. Claims 61-65 depend from claim 60 and are thus allowable for at least the same reasons as claim 60.

In addition, regarding claim 62, the Examiner states "Although Osenbach fails to specifically disclose [a transparent bonding layer including one or more luminescent materials] . . . Applicant discloses that the bonding layer could be formed from metal oxides therefore Osenbach's bonding layer would have the same characteristics." Applicants can find no teaching or suggestion in Osenbach of including a luminescent material. The Examiner's comment, quoted above, seems to suggest that luminescence is an inherent property of Osenbach's AlO bonding technique, which is simply not the case. Claim 62 is thus allowable for this additional reason.

C. Other 103 rejections

Claims 66-68 are rejected under 35 U.S.C. 103(a) as obvious over Jiang in view of Osenbach and Okazaki et al, U.S. Patent 6,495,862. Claim 71 is rejected under 35 U.S.C. 103(a) as obvious over Jiang in view of Osenbach and Musk, U.S. Patent 4,983,009. Claim 72 is rejected under 35 U.S.C. 103(a) as obvious over Jiang in view of Osenbach and

PATENT LAW GROUP LLP
2635 N. FIRST ST.
SUITE 223
SAN JOSE, CA 95134
(408) 383-0480
FAX (408) 382-0481

Burgyan, U.S. Patent 4,109,054. Claim 73 is rejected under 35 U.S.C. 103(a) as obvious over Jiang in view of Osenbach and Sato, JP 355065473. Claims 66-68, and 71-73 depend from claim 60. All references besides Jiang and Osenbach are cited for reasons unrelated to the above-described deficiencies of Jiang and Osenbach with respect to claim 60. Accordingly, claims 66-68, and 71-73 are allowable over the art cited for at least the same reasons that claim 60 is allowable over Jiang and Osenbach.

Applicants respectfully request allowance of all pending claims. Should the Examiner have any questions, the Examiner is invited to call the undersigned at (408) 382-0480.

Certification of Facsimile Transmission

I hereby certify that this paper is being facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

R Leiterman 12/16/04
Signature Date

Respectfully submitted,

R Leiterman

Rachel V. Leiterman
Attorney for Applicant(s)
Reg. No. 46,868

PATENT LAW GROUP LLP
2635 N. FIRST ST.
SUITE 223
SAN JOSE, CA 95134
(408) 382-0480
FAX (408) 382-0481